EXECUTIVE SUMMARY

Purpose

Groundwater & Environmental Services, Inc. (GES) and Roux Associates, Inc. (Roux) were contracted by Exxon Mobil Corporation (ExxonMobil) to complete a comprehensive site assessment at the Exxon service station (Exxon station or Site) located at 2800 Fallston Road, Fallston MD and the surrounding Upper Crossroads area (Study Area). The site assessment was conducted under the supervision of the Maryland Department of the Environment (MDE). The principal objectives of the comprehensive site assessment included the following:

1. Evaluate the occurrence and distribution of methyl tertiary-butyl ether (MTBE) within the Study Area;

2. Identify potential sources of MTBE;

3. Refine the preliminary site conceptual model (the understanding of site-specific hydrogeologic conditions dictating the movement of ground water and dissolved contaminants) previously summarized in the October 8, 2004 Site Assessment Report; and

4. Develop requisite data to design a Corrective Action Plan (CAP).

Private Supply Well Sampling and Treatment

In its effort to evaluate the occurrence and distribution of MTBE in commercial and residential supply wells within the Study Area, ExxonMobil sampled 360 private supply wells from May 2004 through January 2005 within an approximate ½-mile radius (the original Study Area established by the MDE) surrounding the Site. In response to community requests, some private wells outside the original ½-mile radius were also sampled. In most instances, individual supply wells were sampled on multiple occasions to evaluate potential variability in ground-water quality. Data obtained from these sampling efforts demonstrated that 205 of the 360 wells sampled did not report MTBE concentrations at or above the laboratory reporting limit of 0.5 parts per billion. Fourteen wells were reported to have MTBE concentrations, on at least one

occasion, above the aesthetic guideline established by the MDE (20 parts per billion, ug/L). This guideline is not health-based and was originally developed by the United States Environmental Protection Agency to represent a lower threshold at which some individuals may notice a change in taste or odor.

Due to the limited site-specific data regarding ground-water quality and hydrogeology at the outset of the site assessment (May 2004); as a precautionary measure, ExxonMobil established a program to provide bottled water to all residents within the Study Area. Further, carbon filtration systems were provided for private wells reporting any concentration of MTBE, irrespective of whether the concentration was above or below the laboratory reporting limit or MDE's aesthetic guideline. As a result of these efforts, more than 193 point-of-entry treatment (POET) systems have been provided to homes within the Study Area. These systems have been maintained and sampled on a monthly basis at no cost to the residents. With no objection from the MDE, bottled water deliveries have recently been stopped where laboratory data confirms that the POET system is functioning as designed for the treatment of MTBE.

Refined Site Conceptual Model

A site conceptual model is a term used by environmental regulators and scientists to describe the various processes that control the movement of a compound (in this case the gasoline additive MTBE) through the environment. A site conceptual model is a working model that is continuously revised and refined as new data are developed. A fundamental building block of the site conceptual model is an understanding of the hydrogeologic framework through which ground water moves in the subsurface. To this end, one focal point of ExxonMobil's comprehensive site assessment was to characterize the subsurface hydrogeology beneath and adjacent to the Site. This has been accomplished through multiple and diverse techniques including: 1) a review of published literature regarding local hydrogeology; 2) installation of 21 soil borings and 29 monitoring wells; 3) application of surface and subsurface geophysical tools; 4) collection and analysis of 38 soil and over 2,300 ground-water samples; 5) hydraulic testing of individual monitoring wells; and 6) a 72-hour constant rate pumping test of the geologic formation.

Geology

Analysis of the data obtained from the above-noted techniques has revealed that the subsurface beneath and adjacent to the Site is generally comprised of three distinct geologic strata:

1. a silty clay (saprolite) at the surface extending to depths of approximately 40 feet;

2. a weathered metamorphic bedrock, underlying the saprolite and extending to an approximate depth of 65 feet; and

3. competent metamorphic bedrock, beneath the weathered rock, which extends hundreds of feet below grade.

These studies have also demonstrated that the weathered and competent bedrock, and to a lesser degree the saprolite (demonstrating some relic structure), exhibit a distinct structural fabric (foliations, mineral banding, bedding and fractures) predominantly striking to the northeast (N30°E to N50°E) and dipping to the northwest. The significance of this, is that fractures (cracks in the rock potentially capable of transmitting ground water) in the bedrock are predominantly oriented parallel to this structure. Further, it was determined that the density of fractures capable of transmitting ground water decreased substantially below a depth of approximately 75 to 100 feet below the ground surface.

Hydrogeology

The net result of the bedrock fracture fabric is a limitation on both the direction and depth that ground water and dissolved MTBE will move from the area of the Site. Studies at the Site have revealed that the subsurface beneath and adjacent to the Site can generally be characterized by three hydrostratigraphic units (a section of the subsurface that exhibits similar hydraulic properties irrespective of its geologic composition), these include:

1. the highly weathered and fractured bedrock, generally from 40 to 65 feet below grade (the upper unit);

2. less weathered/fractured bedrock transitioning into the upper surface of the competent bedrock, generally from 65 to 100 feet (middle unit); and

3. competent bedrock with limited fracturing at depths below approximately 100 feet (lower unit).

Available data indicate that ground water present in all three hydrostratigraphic units occurs under semi-confined or locally confined hydraulic conditions. The limited permeability of the overlying saprolite and reduced vertical interconnection between fractures produces the semi-confined and confined conditions. Multiple tests (e.g., packer testing, FLUTe testing, and the 72-hour constant rate pumping test) have demonstrated that the upper unit contains and transmits the most ground water. In contrast, the lower unit contains and transmits an insignificant quantity of ground water. Analysis of the constant rate pumping test data resulted in average hydraulic conductivity values of 2.9 and 1.5 feet/day, parallel to the fracture fabric, in the upper and middle units, respectively. Hydraulic conductivity values orthogonal (perpendicular) to the fracture fabric are estimated to be two to three times lower, translating to anisotropy ratios of 2:1 and 3:1 for the upper and middle units, respectively. This anisotropy is consistent with preferential ground-water transport to the southwest.

Monitoring of ground-water elevations from Site observation wells on multiple dates and through variable seasonal conditions has demonstrated that the potentiometric surfaces associated with all three hydrostratigraphic units generally slope to the south[(1)]. The combined influence of the potentiometric head distribution and the bedrock fracture fabric result in a south/southwesterly direction of ground-water flow beneath and adjacent to the Site. Continuous ground-water elevation monitoring from a network of observation wells, in conjunction with the continuous rate pumping test, demonstrated that adjacent supply wells exerted limited, if any, affect on the potentiometric head beneath the Site. Two potential exceptions were the former Wawa supply well and the western supply well at the shopping center across (north of) Fallston Road. The sustained pumping duration and larger extraction volumes associated with these commercial supply wells likely has reversed ground-water flow in a very localized area. The limited and short duration pumping of domestic supply wells surrounding the Site (with the exception of the Morgan property, Lot P-278) is not expected to have a significant effect on the

[(1)]Potentiometric Surface: The surface/level that ground water would rise in response to hydraulic pressure if unrestricted by overlying geologic strata.

potentiometric head beneath the Site and no impact on the direction of ground-water flow in this same area.

Soil and Ground-Water Quality

A soil sampling program was conducted at the Site to evaluate soil quality. Based upon available data, no residual gasoline source was identified in the soils beneath the Site. When detected, MTBE was present at higher concentrations in soils in the saturated zone (i.e., in ground water). The presence of MTBE in these soils is attributed to transport in ground water and reflects the chemistry of the ground water.

Regional ground-water quality data compiled in conjunction with the private well sampling program are illustrated in Figure ES-1. Specifically, Figure ES-1 depicts maximum MTBE concentrations from all private well samples, irrespective of whether: 1) the MTBE concentrations were above the laboratory reporting limit of 0.5 parts per billion; 2) the concentrations were estimated below the reporting limit by the laboratory ("J" qualified data); or 3) whether or not they were confirmed through multiple detections. A review of these data has resulted in the conclusions below.

1. Only a limited number (14) private supply wells reported MTBE concentrations above the MDE aesthetic guideline concentration of 20 ug/L. These 14 wells are not all clustered in one area.

2. There is a wide-spread amorphous distribution of low level MTBE concentrations within the Study Area. This observation is consistent with data provided by the Harford County Health Department in a broader context, extending to distances of 2 to 3 miles from the Site. The amorphous distribution of low level reported MTBE concentrations is not related to the Exxon station but rather is consistent with multiple point and non-point sources within the Study Area as referenced in the October 8, 2004 Site Assessment Report.

3. Areas reporting MTBE concentrations greater than 20 ug/L to the north and northwest of the Site are not associated with operations at the Exxon station.

4. MTBE concentrations greater than MDE's aesthetic guideline concentration were observed beneath and immediately downgradient of the Site. There is presently insufficient data to identify the source for MTBE concentrations greater than 20 ug/L to the southwest of the Site (i.e., on and southwest of Green Road). For this reason a Revised Study Area has been established to further characterize this area.

Revised Study Area

Data collected in conjunction with the comprehensive site assessment has enabled refinement and validation of the site conceptual model. The fracture fabric of the bedrock and the prevailing potentiometric head distribution imposes substantial limitations on the potential direction of ground-water and MTBE transport in the area of the Site. Based upon these data, the current Study Area can be focused by applying definitive lateral boundaries. There are currently insufficient data to establish a definitive downgradient (southwest) boundary within the Revised Study Area. Therefore, as a precautionary measure, a wedge-shaped area, incorporating a considerable distance southwest of the Site, has been preliminarily developed to represent a Revised Study Area (Figure ES-2). ExxonMobil is requesting MDE's approval of the Revised Study Area.

Future Activities

Subject to MDE approval, the following activities are proposed going forward:

1. A regional potentiometric surface elevation survey of selected private wells;

2. Monthly sampling of 8 on-site monitoring wells;

3. Quarterly sampling of all existing monitoring wells;

4. Monthly sampling of 10 POET systems adjacent to the Site;

5. Subject to MDE approval and after public communication, eliminate: private well sampling; the current POET system maintenance program; and bottled water deliveries for all locations outside the Revised Study Area;

6. Continue to provide private well sampling and POET system installation and maintenance (as appropriate) within the Revised Study Area;

7. Develop a plan for further investigation within the Revised Study Area; and

8. Implement a Corrective Action Plan at the Site

Proposed Corrective Action Plan

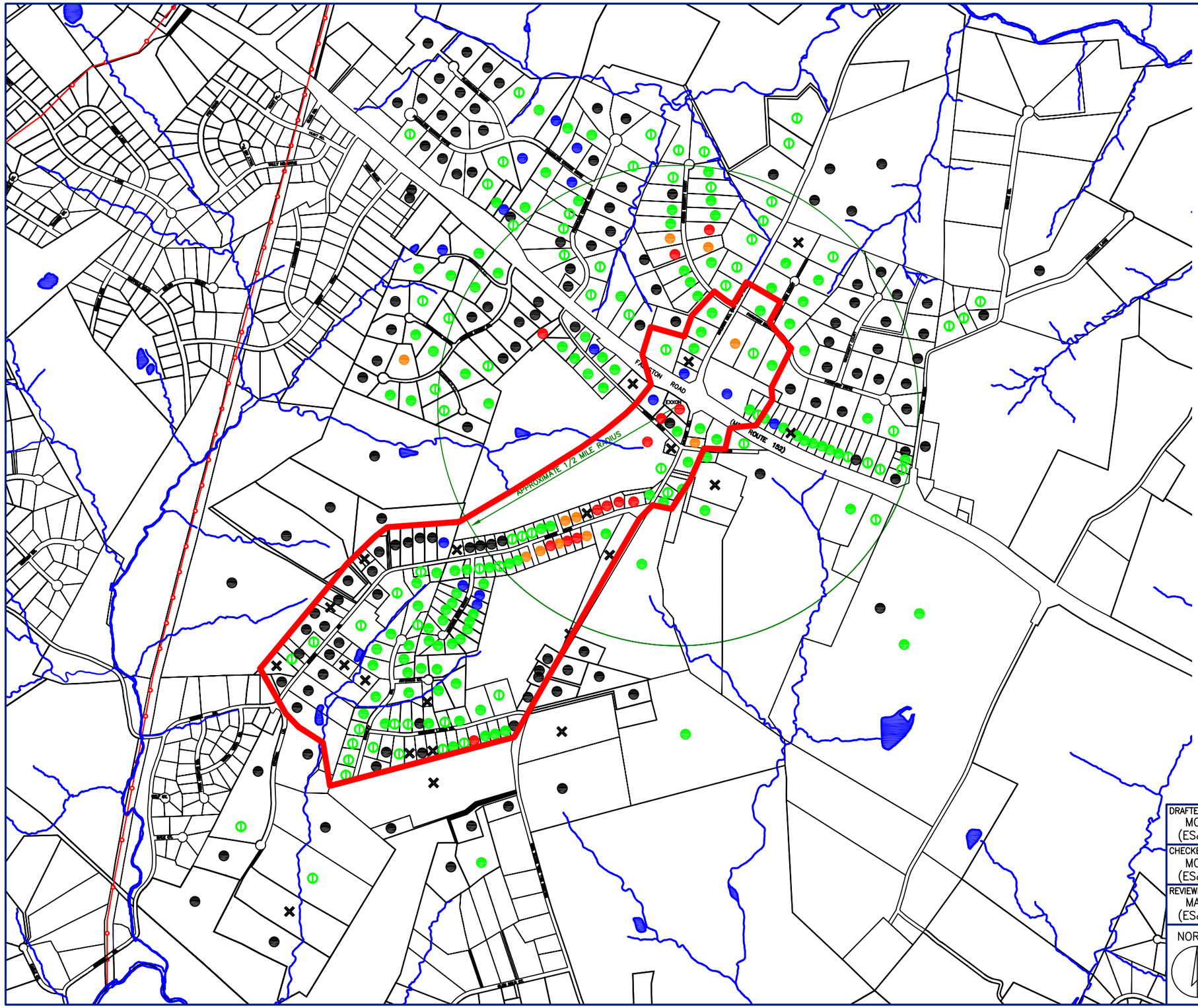
At MDE's request, a Corrective Action Plan (CAP) has been prepared and is being submitted concurrently with this comprehensive site assessment report. Elements of the CAP include, in part, the following:

1. Install and operate a network of ground-water extraction wells on and immediately south of the Site to capture and recover dissolved-phase MTBE in this area while minimizing the potential for dewatering adjacent private supply wells;

2. Continued operation of the existing SVE system in the tank field area;

3. Continued operation and maintenance of the POET systems within the Revised Study Area.

A full and complete presentation of the proposed activities including performance and monitoring criteria, as well as contingent measures is contained in the CAP.



LEGEND

WATER BODIES

COLONIAL PIPELINE

METHYL TERTIARY BUTYL ETHER (MTBE)

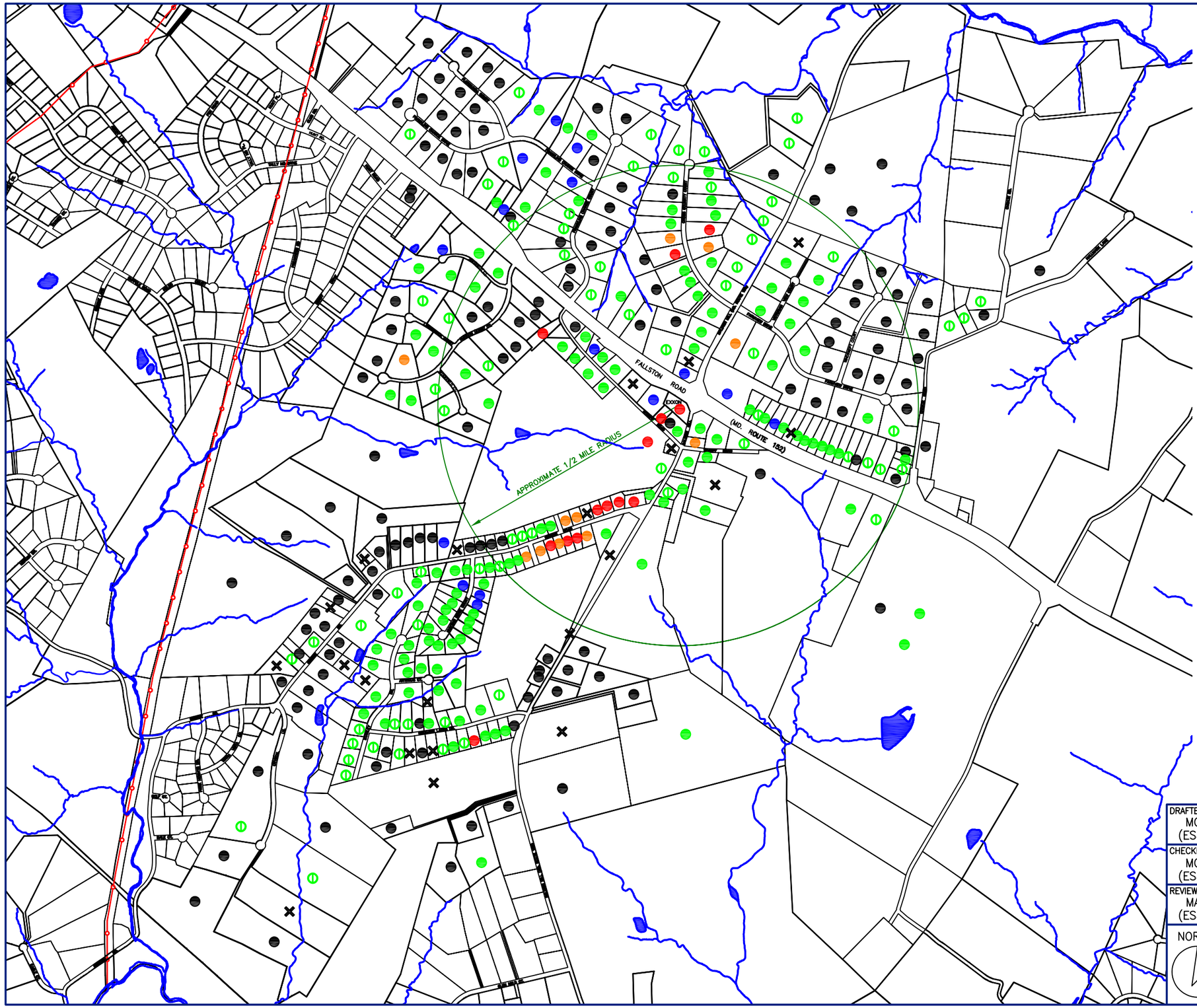
CONCENTRATION IN PARTS PER BILLION

- MTBE ≥20
- MTBE ≥10 to <20
- MTBE ≥5 to <10
- MTBE ≥0.5 to <5
- MTBE >ND to <0.5 (J QUALIFIER)
- MTBE NOT DETECTED (ND)
- NO POTABLE WELL ON PROPERTY

MTBE concentrations indicated on this figure reflect maximum concentrations detected in samples collected from private supply wells between 5–6–04 and 2–28–05. They do not represent the actual location of the private supply well.

The results on this figure are from the domestic well sampling program or, if a POET system is present, from the POET influent results.

DRAFTED BY: MCS (ES&T)	**REVISED STUDY AREA**
CHECKED BY: MCS (ES&T)	**EXXON SERVICE STATION #2-6329** **2800 FALLSTON ROAD** **FALLSTON, MARYLAND**
REVIEWED BY: MAP (ES&T)	Groundwater & Environmental Services, Inc. 2142 PRIEST BRIDGE COURT, SUITE 1, CROFTON, MD 21114
NORTH	SCALE IN FEET (APPROXIMATE) 0 1100 / DATE 3–21–05 / FIGURE ES–2



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DRAFTED BY: MCS (ES&T)	**PRIVATE SUPPLY WELL SAMPLING MAP WITH SUMMARY OF MAXIMUM MTBE RESULTS FROM MAY 2004-FEBRUARY 2005**
CHECKED BY: MCS (ES&T)	**EXXON SERVICE STATION #2-6329 2800 FALLSTON ROAD FALLSTON, MARYLAND**
REVIEWED BY: MAP (ES&T)	Groundwater & Environmental Services, Inc. 2142 PRIEST BRIDGE COURT, SUITE 1, CROFTON, MD 21114
NORTH	SCALE IN FEET (APPROXIMATE) 0 1100 / DATE 3-18-05 / FIGURE ES-1